CLAIMS:

1. An antenna comprising a photoconductive material and a plurality of spaced apart electrodes provided on said photoconductive material, each electrode having at least one facing edge which faces a facing edge of an adjacent electrode, a physical barrier being provided abutting a facing edge of at least one electrode, said barrier extending to at least the full height of said facing edge.

2. An antenna according to claim 1, wherein the facing edge of the at least one electrode is provided within a recess of the surface of said photoconductive material, such that a side-wall of the recess provides said barrier.

3. An antenna according to claim 2, wherein the facing edges of adjacent electrodes are provided within recesses, such that the side walls of said recesses provides the barriers for both facing edges, and wherein photoconductive material is provided between said adjacent facing edges.

4. An antenna according to either of claims 2 or 3, wherein said sidewalls extend to at least the full height of said facing edge.

5. An antenna according to claim 4, wherein a capping material is provided over said electrodes.

6. An antenna according to either of claims 2 or 3, wherein a capping material is provided over at least a part of the facing edges such that said capping material and the sidewalls of said recess form said barrier.

7. An antenna according to any of claims 2 to 6, wherein the height of the side walls exceeds the height of the said facing edge by at most twice the penetration depth of the radiation used to excite the antenna, in the photoconductive material.

8. An antenna according to any of claims 2 to 6, wherein the height of the side walls exceeds the height of the said facing edge by at most the penetration depth of the radiation used to excite the antenna, in the photoconductive material.

9. An antenna according to any of claims 2 to 6, wherein the height of the sidewalls exceeds the height of the facing edge by at most 1μm.

10. An antenna according to claim 1, wherein the electrodes are provided on a planar surface of said photoconductive material and a capping material is provided on the facing edges of said electrodes such that said capping material forms said barrier.

11. An antenna according to any of claims 5, 6 and 10, wherein said capping material is an antireflective material.

12. An antenna according to any of claims 5, 6, 10 and 11, wherein said capping material comprises silicon nitride, silicon dioxide, silicon monoxide, photoresist, polymide or acrylics.

13. An antenna according to any preceding claim, wherein two electrodes are provided in a 'bow-tie' configuration, each electrode having a triangular portion and being arranged such the apexes of said triangular portion face each other and are spaced apart, said facing edges being provided by said apexes.

14. An antenna according to any of claims 1 to 12, wherein two electrodes comprise a plurality of elongate fingers, provided in an interdigitated arrangement with the facing edges being provided by the elongate edges of adjacent fingers.

15. An antenna according to any preceding claim, wherein the gap between facing edges is at most 100μm.

16. An antenna according to claim 12, wherein the gap between facing edges is at most 1μm.

17. An antenna according to any preceding claim, wherein the photoconductive material comprises a least one selected from LT-GaAs, LT AlGaAs, As-GaAs or LT-InGaAs.

18. An antenna according to any preceding claim, wherein said electrodes comprise at least one selected from Gold, Aluminium, Titanium, NiCr or Pd.

19. An antenna according to any preceding claim, further comprising biasing means configured to apply a bias between facing edges of adjacent electrodes, said biasing means being configured to bias the electrodes such that the current density at their facing edges exceeds the current density at which electromigration occurs.

20. An antenna according to any preceding claim, said antenna being configured to irradiate radiation in the frequency range from 0.25GHz to 100THz.

21. An antenna according to any of claims 1 to 18, further comprising means for measuring the current flowing through the electrodes.

22. An antenna according to claim 21, being configured to detect radiation in the frequency range from 0.25GHz to 100THz.

23. A method of fabricating an antenna, the method comprising:
forming a layer of resist on a photoconducting material;
patterning said layer of resist such that a pattern of resist is removed to expose said photoconductive material;
etching said photoconductive material and said resist such that said exposed photoconducting material is etched to a predetermined depth;
evaporating conducting material on said patterned photoconducting material and said photoresist, said conducting material being evaporated to a thickness which is less than that of the predetermined depth of the etch; and removing said photoresist.

24. A method accordingly to claim 23, wherein said conducting material is evaporated at a rate of less than or equal to 0.2nm per second.

25. An antenna as hereinbefore described with reference to any of the accompanying figures.

26. A method of forming an antenna, as substantially hereinbefore described with reference to any of the accompanying figures.